**WHAT IS CLAIMED:**

1. A method of inducing angiogenesis comprising:

delivering a trk receptor ligand in an amount effective to induce angiogenesis.

2. A method according to claim 1, wherein said trk receptor ligand is a trk B receptor ligand.

3. A method according to claim 1, wherein said trk receptor ligand is a trk C receptor ligand.

4. A method according to claim 1, wherein said trk receptor ligand is selected from the group consisting of brain derived neurotrophic factor, NT-3, NT-4, and recombinant and small molecule mimics thereof.

5. A method according to claim 1, wherein said delivering comprises:

delivering a protein or polypeptide ligand.

6. A method according to claim 1, wherein said delivering comprises:

delivering a nucleic acid sequence encoding said trk receptor ligand.

7. A method for treating a pathological disorder in a patient comprising:

administering a trk receptor ligand in an amount effective to treat the pathological disorder by inducing angiogenesis.

8. A method according to claim 7, wherein said pathological disorder is cardiac ischemia.

9. A method according to claim 7, wherein said pathological disorder is a non-cardiac vascular disorder.

10. A method according to claim 9, wherein said non-cardiac vascular disorder is selected from the group consisting of atherosclerosis, renal vascular disease, and stroke.

11. A method according to claim 7, wherein said pathological disorder is a wound.

12. A method according to claim 7, wherein said pathological disorder is a condition of placental insufficiency.

13. A method according to claim 7, wherein said pathological disorder is unvascularized tissue related to grafts and transplants.

14. A method according to claim 7, wherein said trk receptor ligand is a trk B receptor ligand.

15. A method according to claim 7, wherein said trk receptor ligand is a trk C receptor ligand.

16. A method according to claim 7, wherein said trk receptor ligand is selected from the group consisting of brain derived neurotrophic factor, NT-3, NT-4, and recombinant and small molecule mimics thereof.

17. A method according to claim 7, wherein said administering comprises:

delivering protein or polypeptide ligand.

18. A method according to claim 7, wherein said administering comprises:

delivering a nucleic acid sequence encoding said trk receptor ligand.

19. A method according to claim 7, wherein said administering is carried out orally, intravenously, intramuscularly, intraperitoneally, subcutaneously, by intranasal instillation, by application to mucous membranes, intracerebrally, into cerebral spinal fluid, or by instillation into hollow organ walls or newly vascularized blood vessels.

20. A method of promoting vessel growth or stabilization comprising:

delivering a trk receptor ligand in an amount effective to promote vessel growth or stabilization.

21. A method according to claim 20, wherein said trk receptor ligand is a trk B receptor ligand.

22. A method according to claim 20, wherein said trk receptor ligand is a trk C receptor ligand.

23. A method according to claim 20, wherein said trk receptor ligand is selected from the group consisting of brain derived neurotrophic factor, NT-3, NT-4, and recombinant and small molecule mimics thereof.

24. A method according to claim 20, wherein said delivering comprises:

delivering a protein or polypeptide ligand.

25. A method according to claim 20, wherein said delivering comprises:

delivering a nucleic acid sequence encoding said trk receptor ligand.

26. A method for treating a pathological disorder in a patient comprising:

administering a trk receptor ligand in an amount effective to treat the pathological disorder by promoting vessel growth or stabilization.

27. A method according to claim 26, wherein said pathological disorder relates to endothelial apoptosis or necrosis.

28. A method according to claim 26, wherein said administering comprises:

delivering a protein or polypeptide ligand.

29. A method according to claim 26, wherein said administering comprises:

delivering a nucleic acid sequence encoding said trk receptor ligand.

30. A method according to claim 26, wherein said administering is carried out orally, intravenously, intramuscularly, intraperitoneally, subcutaneously, by

intranasal instillation, by application to mucous membranes, intracerebrally, into cerebral spinal fluid, or by instillation into hollow organ walls or newly vascularized blood vessels.

31. A method of inhibiting angiogenesis comprising:

delivering an inhibitor of expression or activity of a trk receptor ligand in an amount effective to inhibit angiogenesis.

32. A method according to claim 31, wherein said trk receptor ligand is a trk B receptor ligand.

33. A method according to claim 31, wherein said trk receptor ligand is a trk C receptor ligand.

34. A method according to claim 31, wherein said trk receptor ligand is selected from the group consisting of brain derived neurotrophic factor, NT-3, NT-4, and recombinant and small molecule mimics thereof.

35. A method according to claim 31, wherein said delivering comprises:

delivering an antisense molecule complementary to mRNA encoding a trk receptor ligand.

36. A method according to claim 31, wherein said delivering comprises:

delivering a trk receptor body.

37. A method for treating a pathological disorder in a patient comprising:

administering an inhibitor of expression or activity of a trk receptor ligand in an amount effective to treat the pathological disorder by inhibiting angiogenesis.

38. A method according to claim 37, wherein said pathological disorder is a vascular proliferative disease.

39. A method according to claim 38, wherein said vascular proliferative disease is selected from the group consisting of hemangiomas and proliferative retinopathy.

40. A method according to claim 37, wherein said pathological disorder is cancer.

41. A method according to claim 37, wherein said trk receptor ligand is a trk B receptor ligand.

42. A method according to claim 37, wherein said trk receptor ligand is a trk C receptor ligand.

43. A method according to claim 37, wherein said trk receptor ligand is selected from the group consisting of brain derived neurotrophic factor, NT-3, NT-4, and recombinant and small molecule mimics thereof.

44. A method according to claim 37, wherein said administering comprises:

delivering an antisense molecule complementary to mRNA encoding a trk receptor ligand.

45. A method according to claim 37, wherein said administering comprises:

delivering a trk receptor body.

46. A method according to claim 37, wherein said administering is carried out orally, intravenously, intramuscularly, intraperitoneally, subcutaneously, by intranasal instillation, by application to mucous membranes, intracerebrally, into cerebral spinal fluid, or by instillation into hollow organ walls or newly vascularized blood vessels.

47. A method of screening for a modulator of angiogenesis, vessel growth, or vessel stabilization comprising:

providing a candidate compound and

detecting modulation of a trk receptor ligand induced signal transduction pathway in a cell in the presence of the candidate compound, wherein modulation of the signal transduction pathway indicates that the candidate compound is a modulator of angiogenesis, vessel growth, or vessel stabilization.

48. A method according to claim 47, wherein said detecting comprises: assessing trk tyrosine phosphorylation.

49. A method of diagnosing or monitoring a pathological disorder in a patient comprising:

determining the presence or amount of a trk receptor ligand or activation of a trk receptor ligand in a biological sample.

50. A method according to claim 49, wherein said trk receptor ligand is a trk B receptor ligand.

51. A method according to claim 49, wherein said trk receptor ligand is a trk C receptor ligand.

52. A method according to claim 49, wherein said trk receptor ligand is selected from the group consisting of brain derived neurotrophic factor, NT-3, NT-4, and recombinant and small molecule mimics thereof.

53. A method according to claim 49, wherein said biological sample is selected from the group consisting of blood, urine, hair, cheek scrapings, semen, tissue biopsy, and saliva.

54. A method according to claim 49, wherein said pathological disorder is selected from the group consisting of cardiac ischemia, atherosclerosis, renal vascular disease, stroke, a wound, placental insufficiency, unvascularized tissue related to grafts and transplants, disorders relating to endothelial cell apoptosis or necrosis, hemangiomas, proliferative retinopathy, and cancer.

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